

What is claimed is:

[1] An epoxy resin composition containing, as epoxy resin, the following epoxy resin (a) and epoxy resin (b), solid rubber at a ratio of 1 to 20 parts by weight to 100 parts by weight of the entire epoxy resins, and an aromatic amine as a curing agent and having a glass transition temperature of 160 to 220°C in form of a cured material after heat curing at 180°C for 2 hours:

(a) an epoxy resin having oxazolidone rings and

(b) a glycidylamine type epoxy resin.

[2] The epoxy resin composition as claimed in claim 1, wherein 10 to 60% by weight of the epoxy resin (a) and 10 to 60% by weight of the epoxy resin (b) are contained in 100% by weight of the entire epoxy resins.

[3] The epoxy resin composition as claimed in claim 1 or 2, wherein the solid rubber is a solid acrylonitrile-butadiene rubber.

[4] The epoxy resin composition as claimed in one of claims 1 to 3, wherein the glass transition temperature of the cured material after immersion of the cured material in boiling water for 2 days is in a range from 110 to 150°C.

[5] The epoxy resin composition as claimed in one of claims 1 to 4, wherein the mode I energy release rate G_{Ic} of the cured material is in a range from 200 to 1000 J/m².

[6] The epoxy resin composition as claimed in one of claims 1 to 5 having the minimum viscosity in a range from 1 to 50 Pa.s

when the viscosity is measured at heating rate of 2°C/min.

[7] A prepreg containing the epoxy resin composition as claimed in one of claims 1 to 6 and reinforcing fibers.

[8] The prepreg as claimed in claim 7, wherein the volatile component amount is 0.1 to 1% by weight.

[9] A prepreg containing the following constituent elements [A], [B], and [C]:

[A]: reinforcing fibers of a continuous fiber,

[B]: a matrix resin, and

[C]: a thermoplastic resin having openings and a continuous form.

[10] The prepreg as claimed in claim 9, wherein the constituent element [C] is arranged on the outer surface side of the constituent element [A].

[11] The prepreg as claimed in claim 9 or 10, wherein the opening content of the constituent element [C] is in a range from 15% to 90%.

[12] The prepreg as claimed in one of claims 9 to 11, wherein the constituent element [C] is a nonwoven fabric.

[13] The prepreg as claimed in one of claims 9 to 12, wherein the weight of the constituent element [C] in unit surface area in one face side is in a range from 2 g/m² to 20 g/m².

[14] The prepreg as claimed in one of claims 9 to 13, wherein the constituent element [A] is a fabric.

[15] The prepreg as claimed in one of claims 9 to 14, wherein

the minimum weight per 1 cm² of the constituent element [C] in one face side of the prepreg is 20% or higher of the average weight per unit surface area.

[16] The prepreg as claimed in one of claims 9 to 15, wherein the weight ratio of the constituent elements [A], [B], and [C] satisfies as follows:

$$1 < [A]/([B] + [C]) < 1.5.$$

[17] The prepreg as claimed in one of claims 9 to 16, wherein the thermoplastic resin of the constituent element [C] is one or more resins selected from a polyamide, a polyacetal, a polyphenylene oxide, a polyimide, a polyetherimide, a polyethersulfone, a polyetheretherketone, and a polyaramide.

[18] The prepreg as claimed in one of claims 9 to 17 for an honeycomb self-adhesion.

[19] The prepreg as claimed in one of claims 9 to 17 for an outer panel.

[20] A fiber-reinforced composite material obtained by forming the prepreg as claimed in one of claims 9 to 19.

[21] A fiber-reinforced composite material honeycomb sandwich panel comprising the fiber-reinforced composite material as claimed in claim 20 and a honeycomb core.

[22] A laminated composite material comprising the following constituent elements [A], [C], [D], and [E], wherein the constituent element [C] is inserted between the honeycomb core [E] and the constituent element [A]:

[A]: reinforcing fibers of a continuous fiber,

[C]: a thermoplastic resin having openings and a continuous form,

[D]: a cured matrix resin and

[E]: a honeycomb core.

[23] The laminated composite material as claimed in claim 22 having climbing drum peel strength of 33 N•m/m or higher measured based on ASTM D1781-98.

[24] A laminated composite material outer panel comprising the following [A], [C], and [D], wherein the constituent element [C] is arranged in the outer surface side of the constituent element [A]:

[A]: reinforcing fibers of a continuous fiber,

[C]: a thermoplastic resin having openings and a continuous form, and

[D]: a cured matrix resin.

[25] The laminated composite material outer panel as claimed in claim 24, wherein the number of surface pits with depth of 50 μm or deeper is 2 or less per 10 cm^2 in the surface.

[26] The prepreg as claimed in one of claims 9 to 19, wherein the constituent element [B] is the epoxy resin composition according to one of claims 1 to 6.

[27] The laminated composite material as claimed in claim 22 or 23, wherein the constituent element [D] is a cured material of the epoxy resin composition according to one of claims 1 to

6.

[28] The laminated composite material outer panel as claimed in claim 24 or 25, wherein the constituent element [D] is a cured material of the epoxy resin composition according to one of claims 1 to 6.